III. *Account of the* Poma Sodomitica, *or* Dead-Sea Apples. *By* Walter Elliot, *Esq. M. E. S.*

[Read August 3, 1835.]

(Plate 3, fig. 1—5.)

I have the honour to forward to the Entomological Society specimens of the Dead-Sea apples, and of an insect found therein, from the country beyond the Jordan. I also observed it growing plentifully on the different species of dwarf oaks in the Troad. I find the following memorandum made at the time:—"Among the trees" (in the forest between Ein Jerah and Adjeloon in the Hauran) "was one called Sajar el Fush (سجر الفش), on which we found what we conceived to be the true Dead-Sea apple described by Strabo. The Arabs told us to bite it, and laughed when they saw our mouths full of dry dust. It is about the shape and size of a small fig, of a dark reddish purple colour, with rows of small thorns in the upper end; it seemed not to be a fruit, though called so by the Arabs, but was attached artificially to the branches of this and another sort of tree. The inside was full of a snuff-coloured spongy substance, crumbling into dust when crushed. The less matured ones were green and spongy inside, and unctuous to the touch without. Most were perforated with a small hole. This and the mode of their attachment, and the fact that they contained no seeds, indicate them to be the work of an insect. The Arabs describe another excrescence on the same tree of a yellowish colour called Afs, (افس), which I believe to be the same excrescence in a less mature state." The insects sent herewith came out of the excrescences now forwarded on their way to England, and were found among the cotton in which they were packed.

The *Mala insana*, *Poma sodomitica*, or apples of the Dead-Sea, beautiful and tempting to the eye, but crumbling to dust and bitter ashes at the touch,—have been the subject of much controversy amongst travellers in the East and naturalists. Some authors, indeed, as Riland, Maundrell, and Shaw, have doubted the existence of this vegetable production, probably regarding it as one of the inventions of that poetical fancy which so greatly abounds in the works of Persian and other eastern writers. Its existence has,

however, been so generally believed that we find historians and poets speaking of it without any expression of doubt. Tacitus, Strabo, and Josephus all mention it; and Moore, who has collected so much information relative to the natural productions of the East, in the notes to *Lalla Rookh*, felicitously employs that now under consideration in one of his beautiful similes,—

> " Like Dead-Sea fruits that tempt the eye,
> But turn to ashes on the lips,"—

referring in the notes to a description of the apples of Isthakar, sweet on one side and bitter on the other.

Still greater diversity of opinion has existed relative to the real nature of these apples. Pococke supposed them to be pomegranates which had remained on the trees for several years, whereby the interior is dried to dust, although the outside may remain fair. Hasselquist pronounced it to be the fruit of the egg-plant nightshade (*Solanum Melongena*), growing near Jericho, and in the neighbourhood of the Dead-Sea; and which, when attacked by a *Tenthredo*, converts the whole of the inside into dust. M. Seetzen supposes it to be the fruit of a species of cotton-tree growing on the plain of El Ghor, and called *Abeschaez*, having no pulp, but the interior filled with cotton. Chateaubriand considered that he had solved the question, on discovering a shrub near the mouth of the river Jordan, which bears a fruit like a small Egyptian lemon, which, before it is ripe, is filled with a corrosive saline juice, and, when dead, yields a blackish seed compared to ashes, and resembling bitter pepper in its taste. Mr. Jolliffe thought he had found the true Dead-Sea apples in the fruit of a shrub growing near Jericho, of the size of a small apricot, and of a bright yellow colour. And, lastly, Captains Irby and Mangles regarded it as the seed of the *Oskar* plant, growing on the shores of the Dead-Sea. Mr. Conder, who has collected and reviewed these various opinions in his description of Palestine, forming one of the volumes of " *The Modern Traveller*," has considered that none of these statements agreed with the descriptions given by Tacitus and Josephus, adding with much sagacity, " It is possible, indeed, that what they describe " may have originated, like the oak galls in this country, in the " work of some insect, for these remarkable productions sometimes " acquire a considerable size and beauty of colour."

On the 2d June, 1835, a memoir was read before the Linnæan Society by Aylmer Bourke Lambert, Esq., F. R. S., V. P. L. S., &c., and published in the last part of the Transactions of that Society, (vol. xvii. p. 445,) giving a description of the real Dead-Sea apple, brought from the mountains in the neighbourhood of the Dead-Sea, by the Hon. Robert Curvon, and " which now proves to be a gall

" upon a species of oak, containing an insect." The plant is stated to be probably the *Quercus foliis dentato-aculeatis* of Hasselquist. Of the interior of the gall, it is added, that it may truly be said of it, that it is " as bitter as gall." The gall itself is described as pear-shaped, " with a circle of small sharp-pointed protuberances " on the upper part of it, which appear to be formed by the insect " for air, or defence, or some other purpose. In each of the galls " there is an aperture, through which the insect escapes, and in the " centre there is a small round hole or nidus where it lodged." There is also the following postcript: " Since writing the above I " find the leaves of the oak to be those of *Quercus infectoria*, which " is accurately figured in Olivier's *Travels in the Levant*, and that " the galls are identical with those of commerce.* The tree grows " abundantly throughout Syria. The insect has been named by " Olivier *Diplolepis*, and it is also accurately figured by him in the " above-mentioned work, but he does not appear to be aware of " the galls being the same with the *Mala insana*."†

The galls described by Mr. Lambert seem identical with those of Mr. Elliott, although there are several minute discrepancies, as well as additional observations, which an examination of the latter have enabled me to make. That these galls are the true Dead-Sea apples there can no longer be a question; nothing can be more beautiful than their rich, glossy, purplish red exterior—nothing more bitter than their porous and easily pulverized interior. Mr. Elliott's galls did not exhibit the regular transverse series of large pointed protuberances described by Mr. Lambert; instead of these, there were numerous irregularly placed and smaller elevations, generally obtuse, occasionally pointed; but these are integral portions of the gall, and it is difficult to conceive how they can serve the purposes suggested by Mr. Lambert. Notwithstanding the large size of these galls, (two inches long and an inch and a half in diameter,) each contains but a single insect, which makes its escape in the winged state, having consumed but a very small portion of the centre of the gall. The same circumstance occurs in some of our British galls; and it must be regarded as a curious fact, that so large and useless a provision is made for the insect.

The mode in which the gall is attached to the skin of the plant is curious, and unlike that of any other which I have seen; the base of the

* The galls of *Cynips Quercûs Tojæ*, which are found upon *Quercus Pyrenaica Willdenow (Q. Tosa Bosc.)*, and which are figured in the *Journal d'Hist. Nat.* tom. ii. pl. 32, and in Loudon's *Arboretum Britannicum*, p. 1843, have a much greater resemblance to the Dead-Sea apples than the real gall-nuts.

† A copy of Olivier's figure of this gall is given in the *Arboretum Britannicum*, p. 1931.

gall rising upwards on each side, and bending inwards so as to clasp the extremity of the twig somewhat like a pair of wide and curved nippers. I cannot agree with Mr. Lambert in regarding these galls as identical with those of commerce; the latter, as is well known, are not larger than a marble, and the interior is so hard that it can scarcely be cut with a pen-knife; the exterior, on the other hand, is of a dull and pale whitish brown colour. In this opinion, I am confirmed by J. F. Royle, Esq., Professor of Materia Medica in the King's College, London. In other respects, as in shape and protuberances, and in the circumstance of sheltering but a single inhabitant, &c. the two species of galls resemble each other.

Amongst Mr. Lambert's specimens of the galls, a true gall fly, belonging to the genus *Cynips* or *Diplolepis*, as Olivier misnamed it, was found, of which a figure was introduced into his original drawing, but this figure has not been published in Mr. Lambert's memoir. I have, however, been kindly permitted to introduce a copy of it into this memoir, but regret that I am unable to give a detailed description of it, or to institute a comparison between it and the *Cynips Gallæ tinctoriæ** or the *Cynips* of the gall of commerce; from which, however, it must evidently be specifically distinct, and consequently require a new specific name. I am enabled, however, to add a description of an *Ichneumonideous* insect which inhabits these galls, and which I have no hesitation in considering as parasitic upon the *Cynips* of the Dead-Sea or Mad apple.

Family Ichneumonidæ.

Sub-Family Ichneumonides.

Genus Pimpla.

(Sub-Genus Ephialtes, *Grav.*)

Species *Eph. Sodomiticus,* Westw.

E. niger, segmento 2do latitudine longiori, reliquis brevioribus; pedibus rufis, tibiis et tarsis posticis obscurioribus; oviductu corpore dimidio longiori.

Longitudino corporis lin. 5, ovid. lin. 8.

Habitat parasiticè in gallis vulgo "*Poma Sodomitica*" dictis.

In Musæo Soc. Ent. Londin.

Statura et summa affinitas *Eph.* tuberculati, messoris et mani-

* It is quite evident from Olivier's subsequent description of *Cynips Gallæ tinctoriæ*, (Encycl. Méth., vi. 281, *C. scriptorum*, Kirby and Spence, Intr. i. 319,) that he had confounded together two distinct species of galls, and the flies by which they are produced, namely, the Ink gall and the Mad apple. I would propose the name of *Cynips insana* for the insect of the latter. Olivier's figures of the Mad apple and its inhabitant are copied in the *Arboretum Britannicum*, pp. 1931, 1932.

festatoris. *Caput* cum antennis nigris, harum apice extremo subpallidioribus articulisque duobus basalibus subtùs interdum flavis, clypeo in medio rufescenti, palpis albidis. *Thorax* niger, confertissime punctatus, scutello semicirculari. *Pedes* quatuor antici rufi, femoribus basi pallidioribus, coxis albidis, tarsorum apice fusco; pedes 2 postici coxis femoribusque rufis, horum apice extremo fuscescenti, tibiis tarsisque fuscis, illarum basi subalbido fasciâque latâ centrali pallidè fuscis. *Alæ* hyalinæ vix fumatæ, nervis fuscis, stigmateque nigro, areolâ subtriangulari, anticè haud appendiculatâ. *Abdomen* feminæ, capite cum thorace dimidio longius, fere thoracis latitudine, subcylindricum, nigrum, punctatum, segmentorum margine et tuberculo laterali elevato nitidioribus, segmento 1mo subquadrato, angulis anticis rotundatis, utrinque impressione obliquâ notato; 2ndo latitudine dimidio longiori; 3tio quadrato segmentisque sequentibus brevioribus et longitudine decrescentibus. *Oviductus* corpore toto dimidio longior, vaginis nigris subhirtis, terebra pallida.

(J. O. W.)

DESCRIPTION OF THE FIGURES.

PLATE III.

Fig. 1. The Dead-Sea Apple of the natural size suspended from a twig and exhibiting the mode of suspension.
Fig. 2. The same opened.
Fig. 3. One of the larger leaves of the tree upon which it is found.
Fig. 4. *Cynips insana.*
Fig. 5. *Ephialtes Sodomiticus.*

IV. *Descriptions of several new Species of exotic Hemipterous Insects.* *By* J. O. Westwood, *F. L. S., &c.*

[Read November 2, 1835.]

Ordo HEMIPTERA.

Sub-Ordo Heteropterita, *Kirby.*

Sectio Terrestria.

Familia Pentatomidæ.

Genus. Eumetopia. Plate II. fig. 4.

Scutelleræ affinis. Corpus parvum, obovatum; abdomine scutello fere obtecto.

Caput breve, transversum, angulis anticis ante oculos productis et internè curvatis, clypeoque in medio in lobum parvum qua-